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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,677

07/18/2003

Stephen Allen Johnson

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EXAMINER

RINEHART, KENNETH

ART UNIT

PAPER NUMBER

3749

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,677

Applicant(s)

JOHNSON ET AL.

Examiner

Kenneth B. Rinehart

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 1960.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-26, 33-36 and 44-137 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-26, 33-36 and 44-137 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/29/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Response to Arguments***

The applicants arguments concerning group a) are unpersuasive. Paragraphs 14 and 15 of the Bisque declaration does not appear to support the conclusion that the terms melting temperature and ash fusion temperature are synonymous. Per the Bisque declaration the fluid temperature (FT) is defined as the temperature at which the ash cone has melted to a nearly flat layer with a maximum height of 0.0625 inches and requiring visual observation. This term does not appear to be synonymous with the term melting temperature. Consequently one of ordinary skill would not reasonably conclude that the inventor had possession of the claimed invention. Regarding claims 57-58, 78-79, 100-101, and 122-123 the applicants arguments are not persuasive as an individual of ordinary skill in the art would not reasonably conclude that the inventor had possession of the claimed invention as an iron bearing material itself does not have carbon as a constituent. Regarding claims 52, 59, 80, 95, 102, and 124 an individual of ordinary skill in the art would not reasonably conclude that the inventor had possession of the claimed invention as by applicants own admission as the specification reference to crushed while pulverizing generates a fine powder. Regarding claims 66, 88, 110, and 132 an individual of ordinary skill in the art would not reasonably conclude that the inventor had possession of the claimed invention since as discussed above per the Bisque declaration the fluid temperature (FT) is defined as the temperature at which the ash cone has melted to a nearly flat layer with a maximum height of 0.0625 inches requiring visual observation and there is no discussion of a measuring of height via a visual examination. Regarding claims 48, 69, 91 and 113 there is a discussion of coal coming from various grades, however, there is no specific statement that sub bituminous coal is

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fuel of choice used in the apparatus. Regarding claims 66, 88, 110, and 132 an individual of ordinary skill in the art would not reasonably conclude that the inventor had possession of the claimed invention as the disclosure lacks a discussion of the continuum of AFT characteristics with the ash cone melting to a maximum height of 0.0625 inches and requiring visual observation. Regarding claims 24, 68, 90, and 112, the applicant argues that it is inherent that the ash slag in the boiler will be a composite in that it is formed from distinct parts. An individual of ordinary skill in the art would not reasonably conclude that the inventor had possession of the claimed invention since it does not necessarily follow that the slag formed from distinct parts would be formed of distinct parts. This assumes that no interaction occurs between the parts. See discussion above for claim 36.

Applicant's election with traverse of Group 1 in the reply filed on 2/3/06 is acknowledged. The restriction is withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 24-26, 33-36, 44-67, 73, 78, 79, 80, 81, 87, 88, 89, 95, 100, 101, 102, 109, 110, 122-124, 131, 132, 137 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 24, 87, 109, 131 refers to at least a portion of the iron bearing material fluxes

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the ash slag to produce a composite ash slag having at least one ash fusion temperature characteristic selected from the group consisting of initial deformation temperature, softening temperature, hemispherical temperature, and fluid temperature less than the same ash fusion temperature characteristic of the ash slag produced from combustion of the solid fuel alone which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 57, 58, 78, 79, 100, 101, 122, 123 refer to at least one carbon compound which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 52, 59, 73, 80, 95, 102, 124 refers to a pulverizer, wherein the solid fuel is fed to the pulveriser which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 66, 88, 110, 132 refers to ash fusion temperature is less than 2600 which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 48, 69, 91, 113, refers to sub-bituminous coal which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 66, 88, 132 refer to initial deformation temperature, softening temperature, hemispherical temperature, and fluid temperature less than 2600 degrees which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

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possession of the claimed invention. Claim 1, 33, 68, 90, and 112 refer to the iron bearing material fluxes the ash slag to produce the ash slag which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 36, 66, 88, and 132 refer to melting point of the composite ash slag is less than 2600 degrees F which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 24, 68, 90, and 112 refer to at least a portion of the iron bearing material fluxes the ash slag to produce a composite ash slag which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 45 refers to the at least one ash fusion temperature characteristic is fluid temperature which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 24, 50, 51, 68, 72, 94, 112, and 116 refer to a wet bottom boiler which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claim 68, 69, 71-74, 77-81, 84, 85, 90, 91, 93, 94, 95, 96, 99, 100, 102, 103, 106, 107, 112, 113, 115, 116, 117, 118, 121, 122, 124, 125, 128, 129, 134, and 137 are rejected under 35 U.S.C. 102(b) as being anticipated by Hepworth (4572085). Hepworth shows the boiler and iron bearing material and at least partially combusting the ash slag (fig. 1, col. 3, line 12), iron bearing material fluxes ash slag having a melting temperature less than the melting temperature of the ash slag produced from the combustion of the solid fuel alone, viscosity, melting at least a portion of the coal-containing fuel to produce an ash slag, wherein, in the melting step, at least a portion of the iron-containing additive fluxes the ash slag to produce a slag layer having a melting point less than a melting point of an slag layer without the iron-containing additive (This inherently occurs. In chemistry it is elementary that the use of the same reactants under the same conditions in the same reactor will produce the same results.) cyclone boiler (fig. 1), composite ash slag has a viscosity (fig. 1) pulverizing (inherent), magnetite (col. 4, line 59) one carbon compound (col. 3, line 12), a pulveriser inherently the fuel comes from a pulveriser), a burner (fig. 1), a fuel transfer system (fig. 1), combustion chamber (fig. 1), introducing the iron bearing material (fig. 1), a fuel storage bunker (col. 3, line 8), the iron bearing material is added to the solid fuel (col. 3, lines 10-15), sub bituminous (col. 1, line 52).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 69, 70, 75, 76, 82-83, 85-86, 89, 92, 97-98, 101, 104-105, 108, 111, 114, 119-120, 123, 126, 127, 130, 133, 135-136 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hepworth (4572085). Hepworth discloses the boiler and iron bearing material and at least partially combusting the ash slag (fig. 1, col. 3, line 12), iron bearing material fluxes ash slag having a melting temperature less than the melting temperature of the ash slag produced from the combustion of the solid fuel alone, viscosity, melting at least a portion of the coal-containing fuel to produce an ash slag, wherein, in the melting step, at least a portion of the iron-containing additive fluxes the ash slag to produce a slag layer having a melting point less than a melting point of an slag layer without the iron-containing additive. (This inherently occurs. In chemistry it is elementary that the use of the same reactants under the same conditions in the same reactor will produce the same results.) cyclone boiler (fig. 1), composite ash slag has a viscosity (fig. 1) pulverizing (inherent), magnetite (col. 4, line 59) one carbon compound (col. 3, line 12), a pulveriser inherently the fuel comes from a pulveriser), a burner (fig. 1), a fuel transfer system (fig. 1), a combustion chamber (fig. 1), introducing the iron bearing material (fig. 1), a fuel storage bunker (col. 3, line 8), the iron bearing material is added to the solid fuel (col. 3, lines 10-15), steam production (fig. 1). Hepworth discloses applicant's invention substantially as claimed with the exception of P90 size of about 300 microns, dust from blast furnace gas cleaning equipment, ferrous oxide and ferric oxide ferrous sulfide, ferric sulfide, and combinations thereof, introducing at least one carbon compound along with the iron bearing material, hydrocarbon, oil and grease Xanthum gum, iron bearing material is introduced into the boiler an amount ranging from 10 lb/ton of solid fuel to about 20 lb/ton, 50 lb/ton of solid fuel, 15 weight percent, the at least one ash fusion temperature characteristic is less than 2600 F, less than 1.5 wt

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%, 33.5 % and 66.5 %. It would have been obvious to one of ordinary skill in the art at the time the invention was made to P90 size of about 300 microns iron bearing material is introduced into the boiler an amount ranging from 10lb/ton of solid fuel to about 20 lb/ton of solid fuel, 50 lb/ton, 15 weight percent, the at least one ash fusion temperature characteristic is less than 2600 F, less than 1.5 wt %, 33.5 % and 66.5 % since it has been held that the where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges or values involves only routine skill in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have another type of iron bearing material or ferrous oxide and ferric oxide and ferric oxide ferrous sulfide, ferric sulfide, and combinations thereof, the at least one carbon compound being of a specific type of one or more of a hydrocarbon, oil, grease, and xanthum gum, because applicant has not disclosed that the type of iron bearing material, type of carbon provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the type of material of Hepworth or the claimed type because both materials perform the same function equally well.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Rinehart whose telephone number is 571-272-4881. The examiner can normally be reached on 7:20 -4:20.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KBR


KENNETH RINEHART
PRIMARY EXAMINER